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OSCAR W. RICHARDS.

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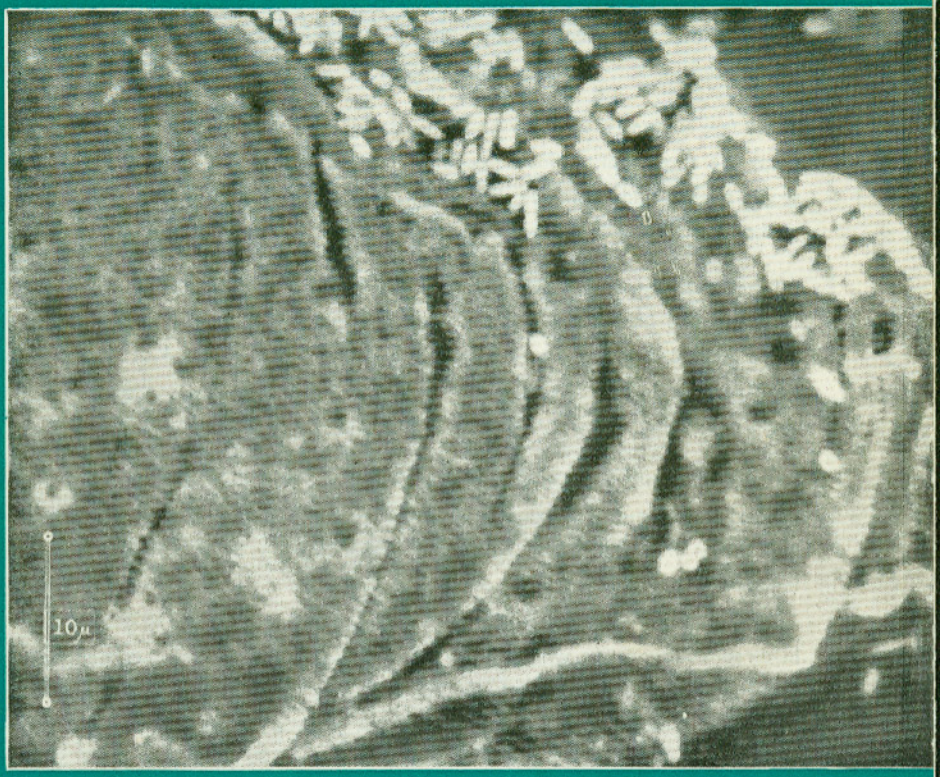


WILSKA-REICHERT'S "ANOPTRAL" CONTRAST EQUIPMENT

Wilska-Reichert's Anoptral Contrast Equipment

The phase-contrast method has opened up new and wide vistas in microscopic technique. The biologist and doctor use it for examining unstained tissue in its natural state, and even live tissue; the chemist and physicist study the growth of crystals; the industrial technologist checks the quality of textile fibres and their behaviour during washing; and the metallographist uses this method for examining the surface structure of materials.

These few examples, while by no means exhausting the scope of phase-contrast microscopy, do show that it has successfully established itself in many branches of microscopic science and technique. It is worthwile to state that Zernike, the creator of this method, was recently awarded the Nobel Prize.

All those who have been able to appreciate the marked difference between an ordinary bright-ground image and a phase-contrast image will naturally wish to work with no other method than the phase-contrast. They may even feel that the optimum must have been reached in this direction. Yet the normal phase-contrast method is not the final stage of development.

The well-known Finnish physiologist, PROF. ALVAR WILSKA, has worked independently of Zernike on the problem of enhancing the contrast in the microscopic image. He has shown that still better pictures and therewith a by far better insight into the matter can be obtained by selecting a suitable coating for the objectives used.

In direct collaboration with Prof. Wilska we have now realised his idea on a manufacturing basis, and provided an "ANOPTRAL" Contrast Equipment for transmitted light which represents a special form of the ordinary phase-contrast arrangement. It comprises:

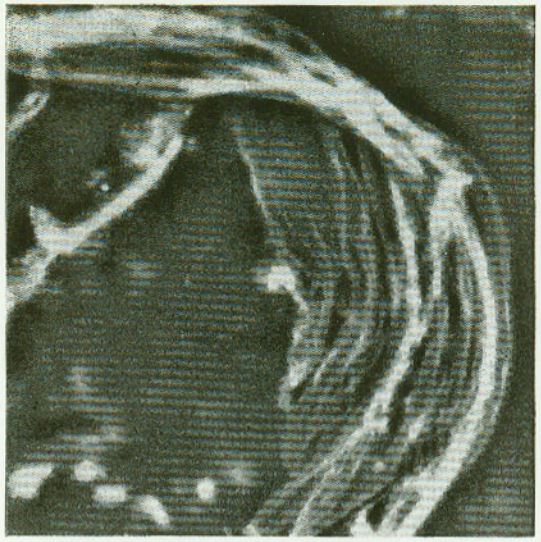
(1) An Anoptral Condenser of high numerical aperture,

(2) A set of four Anoptral Objectives, viz.: 20×, 30×, 45× and 100× (oil immersion), and

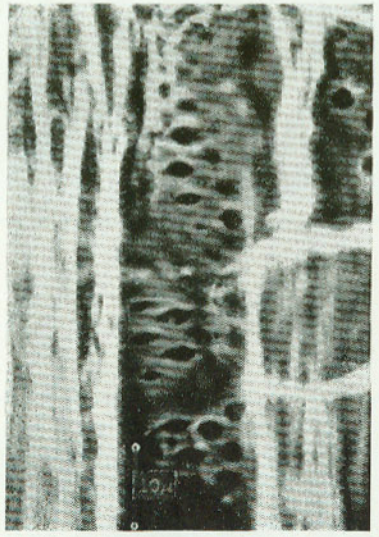
(3) An Auxiliary Microscope of the conventional type for facilitating the adjustment.

TITLE PAGE:

The wrinkled and grooved surface of an epithelial cell of the mucous membrane of the human lip, with epiphytic bacteria. Anoptral Oil-Immersion 100×. Scale of reproduction, 2200×.



Membranic formations of the pharyngeal mucus, thinner than one-hundred thousandth of a millimeter. Anoptral Oil-Immersion 100×. Scale of reproduction, 1100×.



Structures in mountain-ash wood. Anoptral Oil-Immersion 100×. Scale of reproduction 1000×.

The most salient features which make for the incomparable quality of the image are:

Maximum resolving power, obtained by the large effective aperture;

Extraordinary increase in contrast by suitably selecting the absorption of the objective coating;

Clear pictures with the maximum of brilliancy by the avoidance of stray light.

Moreover, the fact that the bright object details, surrounded by a dark bordering, stand out clearly on a background of warm golden brown colour and thus provide a natural and almost plastic impression, subjectively, will be felt very agreeable.

All these advantages combine to form the essential feature of the new method, which is that the microscopist sees more and much finer details of the object than is normally possible.

The anoptral objectives will therefore be indispensable in all cases where it is a matter of searching for and detecting the very finest structural details.

The illustrations show the effectiveness of the method far better than any description can.

The normal phase-contrast objectives are by no means rendered superfluous by the Anoptral optical components. In many cases they will continue to provide a valuable supplement to other microscopic methods. It must be left to the researcher to decide, in terms of the particular problem confronting him, when to use the special equipment with its images of unequal higher contrast, and when to prefer the normal equipment.

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Wilska-Reichert's

Anoptral Contrast Equipment

A. For the Reichert Microscopes Z, CSM, RC, RF

ANOPTRAL DRY ACHROMATIC OBJECTIVES:

20×,	0,40	N.A.	WILAM
30×,	0,65	N.A.	WILES
45×,	0,65	N.A.	WILIL

ANOPTRAL OIL-IMMERSION ACHROMATIC OBJECTIVE:

100×,	1,25	N.A.	WILJA

ANOPTRAL CONDENSER No. 00.27.68:

Revolving disc with 4 annular aperture diaphragms, 5 empty openings and centring adjustment. Aperture iris diaphragm . . . . . WILMT

AUXILIARY MICROSCOPE No. 1830:

Initial power 11× (mean value). With focusing eyepiece . . . . . PHARA

Outfit **WILOZ**[1])

The objectives and the condenser of the Anoptral Contrast equipment are distinguished by a yellow ring.
The Anoptral Contrast equipment can also be used with any other microscope provided it has a rackwork focusing condenser. If the outfit is to be used on a microscope of another maker, please state when ordering the name of the manufacturer, the serial number of the microscope, and the inside diameter of the condenser clamping sleeve of the microscope illuminating apparatus.
For Anoptral contrast microscopy it is necessary to use a microscope lamp of high light yield with adjustable collector (say, Reichert's Illuminating Base-plate "Lux E" or Reichert's Low-voltage Microscope Lamp "Lux FNI").

B. For the Reichert Microscopes "ZETOPAN" ~~and "NEOZET"~~

The same equipment "WILOZ" as above, but with condenser slide No. 1068 for the Anoptral condenser No. 00.27.68 . . . . . **WILPY**[1])

Accessories

Additional Objective Nosepieces on slide, for enabling the normal transmitted light objectives to be substituted for the Anoptral objectives quickly and without trouble.

For a "CSM":

QUADRUPLE NOSEPIECE, on slide, No. 230/1427 . . . . . TRAAK

For a "Z":

QUADRUPLE NOSEPIECE, on slide, No. 230/6238 . . . . . TRARS

For a "ZETOPAN" ~~or a "NEOZET"~~:

QUADRUPLE NOSEPIECE, on slide, No. 230/1070 . . . . . ZEBAB

[1]) If an auxiliary microscope is already available, deduct the code word PHARA.

REICHERT WIEN

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WILIL	4	85.00			

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